IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Patent Application of	)	
	)	
Adam SMITH et al.	)	Mail Stop APPEAL BRIEF - PATENTS
	)	
Application No.: 10/664,929	)	Group Art Unit: 2165
	)	
Filed: September 22, 2003	)	Examiner: F. Syed
	)	
For: SYSTEMS AND METHODS FOR	)	
CLUSTERING SEARCH RESULTS	)	

U.S. Patent and Trademark Office
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APPEAL BRIEF

This Appeal Brief is submitted in response to the final Office Action, dated September 6, 2007, and in support of the Notice of Appeal, filed December 5, 2007.

I.   REAL PARTY IN INTEREST

The real party in interest in this appeal is Google Inc.

II.   RELATED APPEALS, INTERFERENCES, AND JUDICIAL PROCEEDINGS

Appellants are unaware of any related appeals, interferences, or judicial proceedings.

III.   STATUS OF CLAIMS

Claims 1-8 and 12-33 are pending in this application.

Claims 1-8, 12-14, 16-19, and 25-33 have been finally rejected under 35 U.S.C. § 103(a) as unpatentable over <u>Shultz et al.</u> (U.S. Patent Application Publication No. 2003/0061211) in view of <u>Michalewicz et al.</u> (U.S. Patent Application Publication No. 2002/0042789).

Claims 15 and 20-24 have been finally rejected under 35 U.S.C. § 103(a) as unpatentable over <u>Shultz et al.</u> in view of <u>Michalewicz et al.</u> and <u>Rubenczyk et al.</u> (U.S. Patent Application Publication No. 2003/0217052).

Claims 9-11 were previously canceled without prejudice or disclaimer of the subject matter thereof.

Claims 1-8 and 12-33 are the subject of the present appeal. These claims are reproduced in the Claim Appendix of this Appeal Brief.

IV.   STATUS OF AMENDMENTS

No Amendment was filed subsequent to the final Office Action.

V.   SUMMARY OF CLAIMED SUBJECT MATTER

In the paragraphs that follow, a concise explanation of the independent claims and the claims reciting means-plus-function or step-plus-function language that are involved in this appeal, along with the dependent claims that are argued separately, will be provided by referring, in parenthesis, to examples of where support can be found in the specification and drawings.

Claim 1 recites a method (e.g., Figures 4A and 4B) that comprises receiving a search query that includes one or more keywords (e.g., Figure 4A, 410; page 9, line 19 - page 10, line 7); obtaining one or more geographical identifiers (e.g., page 10, lines 1-15; page 11, lines 1-4);

identifying an area of interest based, at least in part, on the one or more geographical identifiers (e.g., Figure 4A, 430; page 11, lines 5-8 and 16-18), where a size of the area of interest is dynamically set based, at least in part, on the one or more keywords (e.g., page 11, lines 16-18); identifying documents that are associated with addresses located within the area of interest (e.g., Figure 4A, 440; page 12, lines 1-7); determining ones of the identified documents that match the one or more keywords as relevant documents (e.g., Figure 4A, 450; page 12, lines 8-12); grouping the relevant documents into clusters based, at least in part, on the addresses associated with the relevant documents (e.g., Figure 4B, 470; page 13, lines 9-23), each of a plurality of the clusters corresponding to one of the addresses (e.g., page 13, lines 9-23); and presenting the clusters (e.g., Figure 4B, 490; page 15, line 6 - page 16, line 3).

Claim 3 recites that the one or more geographical identifiers are inferred independent of the search query (e.g., page 11, lines 1-4).

Claim 4 recites that the one or more keywords relate to a business or organization (e.g., page 10, lines 1-7).

Claim 7 recites that determining a geographic location based, at least in part, on the one or more geographical identifiers (e.g., page 10, lines 16-19), determining a geographic center of the geographic location (e.g., page 10, lines 19-23), and identifying locations within a certain distance of the geographic center as the area of interest (e.g., page 11, lines 5-8 and 16-18), where the certain distance is dynamically set based, at least in part, on the one or more keywords (e.g., page 11, lines 16-18).

Claim 15 recites that the relevancy factor for one of the relevant documents refers to at least one of a number of the one or more keywords present in the one of the relevant documents

or how prominently the one or more keywords appear in the one of the relevant documents (e.g., page 13, lines 2-8).

Claim 19 recites placing at least one of the relevant documents into a plurality of the clusters (e.g., Figure 5).

Claim 20 recites generating scores for the relevant documents within each of the clusters (e.g., page 12, line 20 – page 13, line 8), and sorting the relevant documents within each of the clusters based, at least in part, on the scores (e.g., page 13, lines 21-22).

Claim 21 recites ranking the clusters based on at least one of a distance factor or a relevancy factor (e.g., page 12, lines 20-22; page 15, lines 1-5), and sorting the clusters based, at least in part, on the ranking (e.g., page 15, lines 6-7).

Claim 22 recites that the distance factor for one of the clusters refers to a distance that an address associated with the one cluster is from a geographic center of the area of interest (e.g., page 14, lines 3-4).

Claim 24 recites weighting the distance factor or the relevancy factor differently based, at least in part, on a specificity of the one or more geographical identifiers (page 14, lines 16-22).

Claim 26 recites forming a result output for each of the clusters, the result output including a name of a business or organization and a title for one or more of the relevant documents in the cluster (e.g., page 15, lines 6-22).

Claim 27 recites a system (e.g., Figure 1, 120) that comprises means for receiving a search query that includes one or more keywords (e.g., Figure 1, 120; page 9, line 19 - page 10, line 7); means for identifying a geographical location (e.g., Figure 1, 120; page 10, lines 1-19); means for determining a geographical center of the geographical location (e.g., Figure 1, 120;

page 10, line 19 - page 11, line 4); means for identifying locations within a certain distance of the geographical center as a geographical area of interest (e.g., Figure 1, 120; page 11, lines 5-8 and 16-18), where the certain distance is dynamically set based, at least in part, on the one or more keywords (e.g., page 11, lines 16-18); means for identifying documents that are associated with addresses located within the geographical area of interest (e.g., Figure 1, 120; page 12, lines 1-7); means for determining relevant ones of the identified documents, as relevant documents, based, at least in part, on the search query (e.g., Figure 1, 120; page 12, lines 8-12); and means for forming the relevant documents into clusters based, at least in part, on the addresses associated with the relevant documents (e.g., Figure 1, 120; page 13, lines 9-23), each of a plurality of the clusters corresponding to one of the addresses (page 13, lines 9-23).

Claim 28 recites a system (e.g., Figure 1, 120) that comprises a memory (e.g., Figure 3, 300) configured to store information that matches documents to addresses associated with the documents (e.g., page 8, line 2 - page 9, line 15); and a processor (e.g., Figure 2, 220) connected to the memory and configured to receive a search query that includes one or more geographical identifiers (e.g., page 9, line 19 - page 10, line 15), determine a geographical area of interest based, at least in part, on the one or more geographical identifiers (e.g., page 11, lines 5-23), identify documents that are associated with addresses located within the geographical area of interest based, at least in part, on the information stored in the memory (e.g., page 12, lines 1-7), group the identified documents into clusters based, at least in part, on the addresses associated with the identified documents (e.g., page 13, lines 9-23), each of a plurality of the clusters corresponding to one of the addresses (e.g., page 13, lines 9-23), assign scores to each of the clusters based, at least in part, on a distance factor and a relevancy factor (e.g., page 14, lines 1-

15), where at least one of the distance factor or the relevancy factor is weighted based, at least in part, on a specificity of the one or more geographical identifiers (e.g., page 14, lines 16-22), and provide the clusters as search results based, at least in part, on the assigned scores (e.g., page 15, line 6 - page 16, line 3).

Claim 29 recites a method (e.g., Figures 4A and 4B) that comprises receiving a search query (e.g., Figure 4A, 410; page 9, line 19 - page 10, line 15); identifying a geographical area of interest based, at least in part, on the search query (e.g., Figure 4A, 430; page 11, lines 5-23); identifying documents that are associated with addresses located within the geographical area of interest (e.g., Figure 4A, 440; page 12, lines 1-7); grouping the identified documents into clusters based, at least in part, on the addresses associated with the identified documents (e.g., Figure 4B, 470; page 13, lines 9-23), each of a plurality of the clusters corresponding to one of the addresses (e.g., page 13, lines 9-23); assigning scores to each of the clusters based, at least in part, on a distance factor and a relevancy factor (e.g., Figure 4B, 480; page 14, lines 1-15), where at least one of the distance factor or the relevancy factor is weighted based, at least in part, on a specificity of the one or more geographical identifiers (e.g., page 14, lines 16-22); and presenting the clusters based, at least in part, on the assigned scores (e.g., Figure 4B, 490; page 15, line 6 - page 16, line 3).

Claim 30 recites a method (e.g., Figures 4A and 4B) that comprises receiving a search query that includes one or more keywords and at least one portion of a telephone number (e.g., Figure 4A, 410; page 9, line 19 - page 10, line 15); identifying a geographical area of interest based, at least in part, on the at least one portion of the telephone number (e.g., Figure 4A, 430; page 10, line 16 - page 11, line 8), where a size of the geographical area of interest is

dynamically set based, at least in part, on the one or more keywords (e.g., page 11, lines 16-18); identifying documents that are associated with addresses located within the geographical area of interest (e.g., Figure 4A, 440; page 12, lines 1-7); grouping the identified documents into clusters based, at least in part, on the addresses associated with the identified documents (e.g., Figure 4B, 470; page 13, lines 9-23), each of a plurality of the clusters corresponding to one of the addresses (e.g., page 13, lines 9-23); and presenting the clusters as search results (e.g., Figure 4B, 490; page 15, line 6 - page 16, line 3).

Claim 32 recites a method that comprises receiving a search query that includes one or more keywords and at least one portion of a telephone number (e.g., page 19, line 20, page 20, line 2); identifying documents that are associated with telephone numbers that match the at least one portion of the telephone number (e.g., page 19, line 20 - page 20, line 2); determining ones of the identified documents that match the one or more keywords as relevant documents (e.g., page 19, line 20 - page 20, line 2); grouping the relevant documents into clusters based, at least in part, on the telephone numbers included in the relevant documents (e.g., page 19, line 20 - page 20, line 4), each of a plurality of the clusters corresponding to one of the telephone numbers (e.g., page 19, line 20 - page 20, line 4); and presenting the clusters as search results (e.g., page 19, line 20 - page 20, line 4).

Claim 33 recites a method that comprises receiving a search query that includes at least one portion of a telephone number (e.g., page 19, line 20, page 20, line 1); identifying documents that are associated with telephone numbers that match the at least one portion of the telephone number (e.g., page 19, line 20 - page 20, line 2); grouping the identified documents into clusters based, at least in part, on the telephone numbers included in the identified documents (e.g., page

19, line 20 - page 20, line 4), each of a plurality of the clusters corresponding to one of the

telephone numbers (e.g., page 19, line 20 - page 20, line 4); and presenting the clusters as search

results (e.g., page 19, line 20 - page 20, line 4).

VI.   GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A.   Claims 1-8, 12-14, 16-19, and 25-33 stand rejected under 35 U.S.C. § 103(a) as

unpatentable over Shultz et al. in view of Michalewicz et al.

B.   Claims 15 and 20-24 stand rejected under 35 U.S.C. § 103(a) as unpatentable over

Shultz et al. in view of Michalewicz et al. and Rubenczyk et al.

VII.   ARGUMENT

A.   **The Rejection of Claims 1-8, 12-14, 16-19, and 25-33 Under 35 U.S.C. §
      103(a) Based on Shultz et al. and Michalewicz et al. Should be Reversed.**

The initial burden of establishing a prima facie basis to deny patentability to a claimed

invention is always upon the Examiner. In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed.

Cir. 1992). In rejecting a claim under 35 U.S.C. § 103, the Examiner must provide a factual

basis to support the conclusion of obviousness. In re Warner, 379 F.2d 1011, 154 USPQ 173

(CCPA 1967). Based upon the objective evidence of record, the Examiner is required to make

the factual inquiries mandated by Graham v. John Deere Co., 86 S.Ct. 684, 383 U.S. 1, 148

USPQ 459 (1966). KSR International Co. v. Teleflex Inc., 550 U.S. _____, 127 S. Ct. 1727

(2007). The Examiner is also required to explain how and why one having ordinary skill in the

art would have been led to modify an applied reference and/or combine applied references to

arrive at the claimed invention. <u>Uniroyal, Inc. v. Rudkin-Wiley Corp.</u>, 837 F.2d 1044, 5

USPQ2d 1434 (Fed. Cir. 1988).

      1.   Claims 1, 2, 6, 12-14, 16-18, and 25.

Independent claim 1 is directed to a method that comprises receiving a search query that

includes one or more keywords; obtaining one or more geographical identifiers; identifying an

area of interest based, at least in part, on the one or more geographical identifiers, where a size of

the area of interest is dynamically set based, at least in part, on the one or more keywords;

identifying documents that are associated with addresses located within the area of interest;

determining ones of the identified documents that match the one or more keywords as relevant

documents; grouping the relevant documents into clusters based, at least in part, on the addresses

associated with the relevant documents, each of a plurality of the clusters corresponding to one

of the addresses; and presenting the clusters.

Neither <u>Shultz et al.</u> nor <u>Michalewicz et al.</u>, whether taken alone or in any reasonable

combination, discloses or suggests the combination of features recited in claim 1. For example,

<u>Shultz et al.</u> and <u>Michalewicz et al.</u> do not disclose or suggest identifying an area of interest

based, at least in part, on one or more geographical identifiers, where a size of the area of interest

is dynamically set based, at least in part, on one or more keywords in a received search query.

The Examiner alleged that <u>Shultz et al.</u> discloses that a size of an area of interest is

dynamically set based, at least in part, on one or more keywords and cited paragraphs 0047 and

0048 of <u>Shultz et al.</u> for support. Final Office Action, page 3. Appellants submit that <u>Shultz et

al.</u> provides absolutely no support for the Examiner's allegation.

At paragraph 0046-0049, <u>Shultz et al.</u> discloses information that can be included in a user

query. <u>Shultz et al.</u> discloses that a user query can include (1) location data, (ii) a general information query, and/or (iii) geographic criteria. Paragraph 0046. <u>Shultz et al.</u> defines the location data as information regarding the user's geographic location, destination, or area of interest. Paragraph 0047. <u>Shultz et al.</u> defines the general information query as the subject matter desired that may include one or more criterion about a particular entity or type of entity, such as a business name, category of business, a specific GIS location, a product name, a brand name, a service name, pricing criterion, a time criterion, an event criterion, a service category, or a combination thereof. Paragraph 0048. <u>Shultz et al.</u> defines the geographic criteria as information used in filtering the search results for the information query, such as limiting those results to those results located in a defined geographic area.

As defined by <u>Shultz et al.</u>, only the general information query can reasonably be equated to the one or more keywords recited in claim 1. Claim 1 recites receiving a search query that includes one or more keywords and determining documents, which have been identified as being associated with addresses located within an area of interest, that match the one or more keywords as relevant documents. The location data and the geographic criteria cannot reasonably be equated to the one or more keywords recited in claim 1. For example, <u>Shultz et al.</u> does not disclose or suggest determining documents, which have been identified as being associated with addresses located within an area of interest, that match the location data or the geographic criteria as relevant documents. Instead, <u>Shultz et al.</u> discloses that the location data in conjunction with the geographic criteria are used to identify documents that are associated with addresses located within an area of interest. Paragraph 0049.

Nowhere in paragraphs 0046-0049, or elsewhere, does <u>Shultz et al.</u> disclose or remotely

suggest dynamically setting the size of an area of interest based on the general information

query. Thus, <u>Shultz et al.</u> does not disclose or suggest identifying an area of interest based, at

least in part, on one or more geographical identifiers, where a size of the area of interest is

dynamically set based, at least in part, on one or more keywords in a received search query, as

recited in claim 1.

The Examiner alleged that the general information query includes one or more keywords.

Final Office Action, page 3. The Examiner's allegation with regard to the general information

query appears consistent with Appellants' arguments provided above (i.e., that the general

information query can be equated to the one or more keywords recited in claim 1). With this

interpretation in mind, however, nowhere does <u>Shultz et al.</u> disclose or remotely suggest

dynamically setting the size of an area of interest based on the general information query. Thus,

<u>Shultz et al.</u> does not disclose or suggest identifying an area of interest based, at least in part, on

one or more geographical identifiers, where a size of the area of interest is dynamically set

based, at least in part, on one or more keywords in a received search query, as recited in claim 1.

<u>Michalewicz et al.</u> also does not disclose or suggest these features of claim 1.

Furthermore, <u>Shultz et al.</u> and <u>Michalewicz et al.</u> do not disclose or suggest grouping the

relevant documents into clusters based, at least in part, on the addresses associated with the

relevant documents, each of a plurality of the clusters corresponding to one of the addresses, as

also recited in claim 1.

The Examiner admitted that <u>Shultz et al.</u> does not disclose or suggest grouping relevant

documents into clusters, but alleged that <u>Michalewicz et al.</u> discloses grouping relevant

documents into clusters based, at least in part, on addresses associated with the relevant

documents, where each of the clusters corresponds to one of the addresses, and cited paragraph

0033 of Michalewicz et al. for support. Final Office Action, pages 4-5. Appellants submit that

Michalewicz et al. provides absolutely no support for the Examiner's allegation.

At paragraph 0033, Michalewicz et al. discloses:

> The method includes providing a query and analyzing the query in order to create a query pattern. A document source is then searched for documents which match the query pattern. The retrieved documents are divided into subsets of similar documents, where each subset of the subsets of similar documents is described in terms of a subset pattern. An ordered list of clusters is provided based on the subset pattern of each subset of similar documents. The ordered list of clusters includes separate clusters which contain similar documents retrieved in response to the query.

In this section, Michalewicz et al. discloses creating a query pattern, searching for documents

that match the query pattern, and dividing the retrieved documents into subsets of similar

documents, where each subset is described in terms of a subset pattern. Nowhere in this

paragraph, or elsewhere, does Michalewicz et al. disclose or remotely suggest grouping relevant

documents into clusters based, at least in part, on addresses associated with the relevant

documents, where each of a plurality of the clusters corresponds to one of the addresses, as

recited in claim 1.

The Examiner alleged that the text of paragraph 0033 in Michalewicz et al.

> clearly indicates that grouping the relevant documents into clusters are the retrieved documents are divided into subsets of similar documents and at least in part on the address located within the area of interest is a type of subset pattern.

Final Office Action, page 4. Appellants submit that the disclosure of Michalewicz et al. provides

absolutely no support for the Examiner's allegation. Michalewicz et al. discloses a subset pattern

as a "logical or" of two query patterns, a "logical and" of two query patterns, a "logical

difference" of two query patterns, a "logical or" of a query pattern and a string, a "logical and" of

a query pattern and a string, or a "logical difference" between a query pattern and a string.

Paragraphs 0034-0040. In other words, <u>Michalewicz et al.</u> discloses clustering documents based

on parts of a search query. Paragraph 0132. By stark contrast, the addresses with which

documents are associated and by which the documents are clustered in claim 1 are <u>not</u> part of the

received search query, but are instead addresses associated with the documents that are located

within an area of interest. Thus, <u>Michalewicz et al.</u> does not disclose or suggest grouping

relevant documents into clusters based, at least in part, on <u>addresses associated with the relevant</u>

<u>documents, where each of a plurality of the clusters corresponds to one of the addresses</u>, as

recited in claim 1.

> The Examiner further alleged that
>
> the addresses associated with the relevant documents is exemplified by the prior art as a
> similarity criterion that flows through the clustering of documents. An ordinary person
> skilled in the art understands that in order to cluster documents, there must exist a
> similarity criterion to group such relevant documents. The prior art of record clearly
> teaches that.

Final Office Action, page 4. The Examiner appears to be alleging that since <u>Michalewicz et al.</u>

discloses clustering documents by a subset pattern, <u>Michalewicz et al.</u> must necessarily disclose

clustering documents based on addresses associated with the documents. Appellants submit that

the Examiner's reasoning is flawed. <u>Michalewicz et al.</u>, at best, discloses clustering documents

based on patterns of keywords in a search query. <u>Michalewicz et al.</u> does not disclose or suggest

grouping relevant documents into clusters based, at least in part, on <u>addresses associated with the</u>

<u>relevant documents, where each of a plurality of the clusters corresponds to one of the addresses</u>,

as recited in claim 1.

For at least these reasons, it is respectfully submitted that claim 1 is patentable over

Shultz et al. and Michalewicz et al., whether taken alone or in any reasonable combination, under 35 U.S.C. § 103. Reversal of the rejection of claim 1 is respectfully requested.

Claims 2, 6, 12-14, 16-18, and 25 depend from claim 1. Claims 2, 6, 12-14, 16-18, and 25 are, therefore, also patentable over Shultz et al. and Michalewicz et al., whether taken alone or in any reasonable combination, under 35 U.S.C. § 103 for at least the reasons given with regard to claim 1.

      2.   Claim 3.

Dependent claim 3 recites that the one or more geographical identifiers are inferred independent of the search query.

Initially, claim 3 depends from claim 1. Therefore, claim 3 is patentable over Shultz et al. and Michalewicz et al. for at least the reasons given with regard to claim 1.

Further, Shultz et al. and Michalewicz et al. do not disclose or suggest this feature of claim 3.

The Examiner alleged that Shultz et al. discloses this feature and cited paragraph 0046 of Shultz et al. for support. Final Office Action, page 5. Appellants submit that the disclosure of Shultz et al. provides absolutely no support for the Examiner's allegation.

At paragraph 0046, Shultz et al. discloses:

> User query (step 202) may be submitted to the search engine via a computer, a kiosk, voice recognition telephony, touch screen, wireless device, or any other technology which will act as an interface between terminals 105, 108 and/or 110 and network 120. User query 202 may preferably include (i) location data, (ii) a general information query (e.g., subject matter desired), and/or (iii) geographic criteria.

In this section, Shultz et al. discloses that a user query can include location data, a general information query, and/or geographic criteria. Nowhere in this section, or elsewhere, does

Shultz et al. disclose or remotely suggest one or more geographical identifiers that are inferred independent of the search query, as recited in claim 3.

The Examiner alleged that the geographic criteria, disclosed by Shultz et al., is equivalent to one or more geographic identifiers and is inferred independent of the search query because "it may or may not be part of the user query." Final Office Action, page 5. Appellants submit that the Examiner's allegation is completely without merit. Shultz et al. discloses that the user query optionally includes the geographic criteria since Shultz et al. uses the "and/or" operator. Paragraph 0046. Contrary to the Examiner's allegation, Shultz et al. does not disclose or remotely suggest that if the user query does not include the geographic criteria then the geographic criteria is obtained in some other way. The Examiner's allegation is simply a poor attempt to reconstruct the claimed invention using improper hindsight reasoning.

For at least these reasons, it is respectfully submitted that claim 3 is patentable over Shultz et al. and Michalewicz et al., whether taken alone or in any reasonable combination, under 35 U.S.C. § 103. Reversal of the rejection of claim 3 is respectfully requested.

3.   Claims 4 and 5.

Dependent claim 4 recites that the one or more keywords relate to a business or organization.

Initially, claim 4 depends from claim 1. Therefore, claim 4 is patentable over Shultz et al. and Michalewicz et al. for at least the reasons given with regard to claim 1.

Further, Shultz et al. and Michalewicz et al. do not disclose or suggest this feature of claim 4. The Examiner alleged that Shultz et al. discloses this feature of claim 4, and cited

paragraph 0048 of <u>Shultz et al.</u> for support. Final Office Action, page 6. Appellants submit that the disclosure of <u>Shultz et al.</u> provides absolutely no support for the Examiner's allegation.

In paragraph 0048, <u>Shultz et al.</u> discloses that the general information query is the subject matter desired and may include one or more criterion about a particular entity or type of entity, such as a business name, category of business, a specific GIS location, a product name, a brand name, a service name, pricing criterion, a time criterion, an event criterion, a service category, or a combination thereof. While <u>Shultz et al.</u> discloses that the general information query may include one or more criterion about a particular entity or type of entity, <u>Shultz et al.</u> does not disclose or remotely suggest that a size of an area of interest is dynamically set based, at least in part, on this one or more criterion about a particular entity or type of entity, as would be required by claim 4. Thus, <u>Shultz et al.</u> does not disclose or suggest that a size of an area of interest is dynamically set based, at least in part, on one or more keywords that relate to a business or organization, as required by claim 4.

For at least these reasons, it is respectfully submitted that claim 4 is patentable over <u>Shultz et al.</u> and <u>Michalewicz et al.</u>, whether taken alone or in any reasonable combination, under 35 U.S.C. § 103. Reversal of the rejection of claim 4 is respectfully requested.

Claim 5 depends from claim 4. Therefore, it is respectfully submitted that claim 5 is patentable over <u>Shultz et al.</u> and <u>Michalewicz et al.</u>, whether taken alone or in any reasonable combination, under 35 U.S.C. § 103 for at least the reasons given with regard to claim 4. Reversal of the rejection of claim 5 is respectfully requested.

        4.   Claims 7 and 8.

Dependent claim 7 recites determining a geographic location based, at least in part, on the one or more geographical identifiers, determining a geographic center of the geographic location, and identifying locations within a certain distance of the geographic center as the area of interest, where the certain distance is dynamically set based, at least in part, on the one or more keywords.

Initially, claim 7 depends from claim 1. Therefore, claim 7 is patentable over Shultz et al. and Michalewicz et al. for at least the reasons given with regard to claim 1.

Further, Shultz et al. and Michalewicz et al. do not disclose or suggest the combination of features recited in claim 7. For example, Shultz et al. and Michalewicz et al. do not disclose or suggest identifying locations within a certain distance of the geographic center as the area of interest, where the certain distance is dynamically set based, at least in part, on the one or more keywords, as recited in claim 7, for at least reasons similar to reasons given with regard to claim 1.

The Examiner did not address this feature, particularly the clause "where the certain distance is dynamically set based, at least in part, on the one or more keywords." Thus, the Examiner did not establish a prima facie case of obviousness with regard to claim 7.

For at least these reasons, it is respectfully submitted that claim 7 is patentable over Shultz et al. and Michalewicz et al., whether taken alone or in any reasonable combination, under 35 U.S.C. § 103. Reversal of the rejection of claim 7 is respectfully requested.

Claim 8 depends from claim 7. Therefore, it is respectfully submitted that claim 8 is patentable over Shultz et al. and Michalewicz et al., whether taken alone or in any reasonable combination, under 35 U.S.C. § 103 for at least the reasons given with regard to claim 7.

Reversal of the rejection of claim 8 is respectfully requested.

5.   Claim 19.

Dependent claim 19 recites placing at least one of the relevant documents into a plurality of the clusters.

Initially, claim 19 depends from claim 1. Therefore, claim 19 is patentable over Shultz et al. and Michalewicz et al. for at least the reasons given with regard to claim 1.

Further, Shultz et al. and Michalewicz et al. do not disclose or suggest this feature of claim 19. The Examiner admitted that Shultz et al. does not disclose this feature, but alleged that Michalewicz et al. discloses this feature and cited paragraph 0132 of Michalewicz et al. for support. Final Office Action, pages 12-13. Appellants submit that Michalewicz et al. provides absolutely no support for the Examiner's allegation.

At paragraph 0132, Michalewicz et al. discloses:

> In step 605, the user identifies keywords or presents a complete query (e.g., house AND project). The documents will be retrieved (from the database) on the basis of these keywords (index match). In step 610, the query and/or keywords are analyzed and a "pattern" is created. In step 615, the database is searched for documents which match the pattern. In step 620, the retrieved documents are divided into subsets of similar documents, where each subset is described by its own pattern. In other words, the process creates an ordered list of clusters. In step 625, the user is provided with an initial solution proposal.

In this section, Michalewicz et al. discloses that a database is searched for documents that match a pattern and the documents are divided into subsets of similar documents, where each subset is described by its own pattern. Nowhere in this section, or elsewhere, does Michalewicz et al. disclose or suggest that one of these documents is placed into a plurality of the subsets. Thus, Michalewicz et al. does not disclose or suggest placing at least one of the relevant documents into a plurality of the clusters, as recited in claim 19.

The Examiner merely alleged that the above-identified section of <u>Michalewicz et al.</u> discloses that a plurality of clusters is an ordered list of clusters. Final Office Action, page 13. This allegation is completely unrelated to the feature of claim 19. Thus, the Examiner has not established a prima facie case of obviousness with regard to claim 19.

For at least these reasons, it is respectfully submitted that claim 19 is patentable over <u>Shultz et al.</u> and <u>Michalewicz et al.</u>, whether taken alone or in any reasonable combination, under 35 U.S.C. § 103. Reversal of the rejection of claim 19 is respectfully requested.

  6. Claim 26.

Dependent claim 26 recites forming a result output for each of the clusters, the result output including a name of a business or organization and a title for one or more of the relevant documents in the cluster.

Initially, claim 26 depends from claim 1. Therefore, claim 26 is patentable over <u>Shultz et al.</u> and <u>Michalewicz et al.</u> for at least the reasons given with regard to claim 1.

Further, <u>Shultz et al.</u> and <u>Michalewicz et al.</u> do not disclose or suggest these features of claim 26. The Examiner admitted that <u>Shultz et al.</u> does not disclose these features, but alleged that <u>Michalewicz et al.</u> discloses these features and cited paragraphs 0127-0129 of <u>Michalewicz et al.</u> for support. Final Office Action, pages 13-14. Appellants submit that <u>Michalewicz et al.</u> provides absolutely no support for the Examiner's allegation.

At paragraph 0127-129, <u>Michalewicz et al.</u> discloses:

Now, in use the requestor (user) formulates a query as a set T of words, which should appear in the retrieved documents. The Dialog Control module 300 replies in two steps:

(i) It retrieves all documents DOC(T) which include words from T.

(ii) It groups the retrieved documents into similarity clusters and returns to the user standard patterns of these groups.

In this section, <u>Michalewicz et al.</u> discloses that documents that include words from the query are retrieved and grouped into similarity clusters. Nowhere in this section, or elsewhere, does <u>Michalewicz et al.</u> disclose or suggest forming a result output for each of the clusters, <u>where the result output includes a name of a business or organization and a title for one or more of the relevant documents in the cluster,</u> as recited in claim 26.

The Examiner alleged that the above-identified section of <u>Michalewicz et al.</u> "clearly indicates that the Dialog Control module is the graphical user interface that shows the result output for each cluster and the business or organization and a title are types of words that **should** appear in the retrieved documents." Final Office Action, page 14 (emphasis added). The Examiner appears to be attempting to establish a rejection based on inherency since the Examiner alleged that certain information SHOULD be in the retrieved documents. The Examiner's "inherency" argument falls short of meeting the burden of proof required to establish a rejection based on inherency. According to M.P.E.P. § 2112, the fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. Inherency cannot be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. In this case, the Examiner's allegation does not meet the requisite burden of proof to establish inherency.

Further, even assuming, for the sake of argument, that business or organization information and a title are types of words that appear in retrieved documents in Michalewicz et al., as alleged by the Examiner, claim 26 does not recite anything regarding business or organization information or a title in retrieved documents. Instead, by stark contrast, claim 26 recites forming a result output for each of the clusters, where the result output includes a name of a business or organization and a title for one or more of the relevant documents in the cluster. Michalewicz et al. simply does not disclose or suggest these features.

For at least these reasons, it is respectfully submitted that claim 26 is patentable over Shultz et al. and Michalewicz et al., whether taken alone or in any reasonable combination, under 35 U.S.C. § 103. Reversal of the rejection of claim 26 is respectfully requested.

> 7. Claim 27.

Independent claim 27 is directed to a system that comprises means for receiving a search query that includes one or more keywords; means for identifying a geographical location; means for determining a geographical center of the geographical location; means for identifying locations within a certain distance of the geographical center as a geographical area of interest, where the certain distance is dynamically set based, at least in part, on the one or more keywords; means for identifying documents that are associated with addresses located within the geographical area of interest; means for determining relevant ones of the identified documents, as relevant documents, based, at least in part, on the search query; and means for forming the relevant documents into clusters based, at least in part, on the addresses associated with the relevant documents, each of a plurality of the clusters corresponding to one of the addresses.

Neither Shultz et al. nor Michalewicz et al., whether taken alone or in any reasonable

combination, discloses or suggests the combination of features recited in claim 27. For example, Shultz et al. and Michalewicz et al. do not disclose or suggest means for identifying locations within a certain distance of a geographical center as a geographical area of interest, where the certain distance is dynamically set based, at least in part, on the one or more keywords in a received search query.

The Examiner alleged that Shultz et al. discloses that a size of an area of interest is dynamically set based, at least in part, on one or more keywords and cited paragraphs 0047 and 0048 of Shultz et al. for support. Final Office Action, page 3. Appellants submit that Shultz et al. does not disclose or suggest means for identifying locations within a certain distance of a geographical center as a geographical area of interest, where the certain distance is dynamically set based, at least in part, on the one or more keywords in a received search query for at least reasons similar to reasons given with regard to claim 1.

Shultz et al. and Michalewicz et al. also do not disclose or suggest means for forming the relevant documents into clusters based, at least in part, on the addresses associated with the relevant documents, each of a plurality of the clusters corresponding to one of the addresses, as further recited in claim 27.

The Examiner admitted that Shultz et al. does not disclose or suggest grouping relevant documents into clusters, but alleged that Michalewicz et al. discloses grouping relevant documents into clusters based, at least in part, on addresses associated with the relevant documents, where each of the clusters corresponds to one of the addresses, and cited paragraph 0033 of Michalewicz et al. for support. Final Office Action, pages 4-5. Appellants submit that Michalewicz et al. does not disclose or suggest the above-identified feature of claim 27 for at

least reasons similar to reasons given with regard to claim 1.

For at least these reasons, it is respectfully submitted that claim 27 is patentable over Shultz et al. and Michalewicz et al., whether taken alone or in any reasonable combination, under 35 U.S.C. § 103. Reversal of the rejection of claim 27 is respectfully requested.

        8.   Claim 28.

Independent claim 28 is directed to system that comprises a memory and a processor connected to the memory. The memory is configured to store information that matches documents to addresses associated with the documents. The processor is configured to receive a search query that includes one or more geographical identifiers, determine a geographical area of interest based, at least in part, on the one or more geographical identifiers, identify documents that are associated with addresses located within the geographical area of interest based, at least in part, on the information stored in the memory, group the identified documents into clusters based, at least in part, on the addresses associated with the identified documents, each of a plurality of the clusters corresponding to one of the addresses, assign scores to each of the clusters based, at least in part, on a distance factor and a relevancy factor, where at least one of the distance factor or the relevancy factor is weighted based, at least in part, on a specificity of the one or more geographical identifiers, and provide the clusters as search results based, at least in part, on the assigned scores.

Neither Shultz et al. nor Michalewicz et al., whether taken alone or in any reasonable combination, discloses or suggests the combination of features recited in claim 28. For example, neither Shultz et al. nor Michalewicz et al. discloses or suggests a processor to group the identified documents into clusters based, at least in part, on the addresses associated with the

identified documents, each of a plurality of the clusters corresponding to one of the addresses.

The Examiner admitted that Shultz et al. does not disclose or suggest grouping relevant documents into clusters, but alleged that Michalewicz et al. discloses grouping relevant documents into clusters based, at least in part, on addresses associated with the relevant documents, where each of the clusters corresponds to one of the addresses, and cited paragraph 0033 of Michalewicz et al. for support. Final Office Action, pages 4-5. Appellants submit that Michalewicz et al. does not disclose or suggest the above-identified feature of claim 28 for at least reasons similar to reasons given with regard to claim 1.

Shultz et al. and Michalewicz et al. also do not disclose or suggest a processor to assign scores to each of the clusters based, at least in part, on a distance factor and a relevancy factor, where at least one of the distance factor or the relevancy factor is weighted based, at least in part, on a specificity of the one or more geographical identifiers, as further recited in claim 28.

The Examiner did not address these features of claim 28. Thus, the Examiner did not establish a prima facie case of obviousness with regard to claim 28.

Though the Examiner did not reject claim 28 based on Rubenczyk et al. (U.S. Patent Application Publication No. 2003/0217052), the Examiner alleged that Rubenczyk et al. discloses weighting a distance factor and a relevancy factor differently based, at least in part, on the search query, and cited paragraph 0427 of Rubenczyk et al. for support. Final Office Action, page 22. Appellants submit that Rubenczyk et al. provides absolutely no support for the Examiner's allegation.

At paragraph 0427, Rubenczyk et al. discloses:

The set of classifications that are available or can be made immediately available for the data items are defined by the navigation guidelines that were set up for the database.

> Generally, the guidelines preferably contain a collection of hierarchically structured conceptual taxonomies for domain-specific browsing. Each node in a hierarchy represents a potential class, it may have query terms associated with it and may be linked to a set of domain data items which may be ranked using weighting values. Additional navigation information includes specifications as to which classes are considered as attributes for which other classes, additional relations between concepts, relevance of different attributes, and possible attribute values, as will be explained in greater detail below.

In this section, Rubenczyk et al. discloses nodes of a hierarchy that have query terms and may be linked to a set of domain data items that may be ranked using weighting values. While this section of Rubenczyk et al. discloses "weighting values," these weighting values clearly are not associated with a distance factor or a relevancy factor that is weighted based, at least in part, on a specificity of one or more geographical identifiers. Thus, Rubenczyk et al. does not disclose or remotely suggest a processor to assign scores to each of the clusters based, at least in part, on a distance factor and a relevancy factor, where at least one of the distance factor or the relevancy factor is weighted based, at least in part, on a specificity of the one or more geographical identifiers, as recited in claim 28. Shultz et al. and Michalewicz et al. also do not disclose or suggest these features.

Further, Appellants submit that the Examiner's rejection of claim 28 is deficient for at least a couple of reasons. For example, the Examiner dissected a feature of claim 28 into convenient parts and alleged that Rubenczyk et al. discloses one part of the feature and Shultz et al. discloses another part of the same feature. Final Office Action, pages 22-23. More specifically, the Examiner alleged that Rubenczyk et al. discloses "where at least of the distance factor or the relevancy factor is weighted based" and that Shultz et al. discloses "at least in part, on specificity of the one of the more geographical identifiers." Final Office Action, pages 22-23. Such a dissection of a claimed feature into a few words at a time is clearly improper. This is a

clear example of how the Examiner is using impermissible hindsight in a poor attempt to recreate the claimed invention.

Also, the Examiner appears to reject claim 28 as allegedly being unpatentable over <u>Shultz et al.</u>, <u>Michalewicz et al.</u>, and <u>Rubenczyk et al.</u> Final Office Action, pages 22-23. The Examiner did not provide a motivation statement for combining the alleged features of <u>Rubenczyk et al.</u> into the combined system of <u>Shultz et al.</u> and <u>Michalewicz et al.</u> Thus, the Examiner has failed to establish a prima facie case of obviousness with regard to claim 28.

For at least these reasons, it is respectfully submitted that claim 28 is patentable over <u>Shultz et al.</u> and <u>Michalewicz et al.</u>, whether taken alone or in any reasonable combination, or <u>Shultz et al.</u>, <u>Michalewicz et al.</u>, and <u>Rubenczyk et al.</u>, whether taken alone or in any reasonable combination, under 35 U.S.C. § 103. Reversal of the rejection of claim 28 is respectfully requested.

>   9.   Claim 29.

Independent claim 29 is directed to a method that comprises receiving a search query; identifying a geographical area of interest based, at least in part, on the search query; identifying documents that are associated with addresses located within the geographical area of interest; grouping the identified documents into clusters based, at least in part, on the addresses associated with the identified documents, each of a plurality of the clusters corresponding to one of the addresses; assigning scores to each of the clusters based, at least in part, on a distance factor and a relevancy factor, where at least one of the distance factor or the relevancy factor is weighted based, at least in part, on a specificity of the one or more geographical identifiers; and presenting the clusters based, at least in part, on the assigned scores.

Neither Shultz et al. nor Michalewicz et al., whether taken alone or in any reasonable combination, discloses or suggests the combination of features recited in claim 29. For example, Shultz et al. and Michalewicz et al. do not disclose or suggest grouping the identified documents into clusters based, at least in part, on the addresses associated with the identified documents, each of a plurality of the clusters corresponding to one of the addresses.

The Examiner admitted that Shultz et al. does not disclose or suggest grouping relevant documents into clusters, but alleged that Michalewicz et al. discloses grouping relevant documents into clusters based, at least in part, on addresses associated with the relevant documents, where each of the clusters corresponds to one of the addresses, and cited paragraph 0033 of Michalewicz et al. for support. Final Office Action, pages 4-5. Appellants submit that Michalewicz et al. does not disclose or suggest the above-identified feature of claim 29 for at least reasons similar to reasons given with regard to claim 1.

Shultz et al. and Michalewicz et al. also do not disclose or suggest assigning scores to each of the clusters based, at least in part, on a distance factor and a relevancy factor, where at least one of the distance factor or the relevancy factor is weighted based, at least in part, on a specificity of the one or more geographical identifiers, as further recited in claim 29.

The Examiner did not address these features of claim 29. Thus, the Examiner did not establish a prima facie case of obviousness with regard to claim 29.

Though the Examiner did not reject claim 29 based on Rubenczyk et al. (U.S. Patent Application Publication No. 2003/0217052), the Examiner alleged that Rubenczyk et al. discloses weighting a distance factor and a relevancy factor differently based, at least in part, on the search query, and cited paragraph 0427 of Rubenczyk et al. for support. Final Office Action,

page 22. Appellants submit that the Examiner's rejection is deficient for at least reasons similar to reasons given with regard to claim 28.

For at least these reasons, it is respectfully submitted that claim 29 is patentable over Shultz et al. and Michalewicz et al., whether taken alone or in any reasonable combination, or Shultz et al., Michalewicz et al., and Rubenczyk et al., whether taken alone or in any reasonable combination, under 35 U.S.C. § 103. Reversal of the rejection of claim 29 is respectfully requested.

      10.   Claims 30 and 31.

Independent claim 30 is directed to a method that comprises receiving a search query that includes one or more keywords and at least one portion of a telephone number; identifying a geographical area of interest based, at least in part, on the at least one portion of the telephone number, where a size of the geographical area of interest is dynamically set based, at least in part, on the one or more keywords; identifying documents that are associated with addresses located within the geographical area of interest; grouping the identified documents into clusters based, at least in part, on the addresses associated with the identified documents, each of a plurality of the clusters corresponding to one of the addresses; and presenting the clusters as search results.

Neither Shultz et al. nor Michalewicz et al., whether taken alone or in any reasonable combination, discloses or suggests the combination of features recited in claim 30. For example, Shultz et al. and Michalewicz et al. do not disclose or suggest identifying a geographical area of interest based, at least in part, on at least one portion of a telephone number included in a received search query, where a size of the geographical area of interest is dynamically set based,

at least in part, on one or more keywords also included in the received search query.

The Examiner alleged that Shultz et al. discloses that a size of an area of interest is dynamically set based, at least in part, on one or more keywords and cited paragraphs 0047 and 0048 of Shultz et al. for support. Final Office Action, page 3. Appellants submit that Shultz et al. does not disclose or suggest identifying a geographical area of interest based, at least in part, on at least one portion of a telephone number included in a received search query, where a size of the geographical area of interest is dynamically set based, at least in part, on one or more keywords also included in the received search query for at least reasons similar to reasons given with regard to claim 1.

Shultz et al. and Michalewicz et al. also do not disclose or suggest grouping the identified documents into clusters based, at least in part, on the addresses associated with the identified documents, each of a plurality of the clusters corresponding to one of the addresses, as further recited in claim 27.

The Examiner admitted that Shultz et al. does not disclose or suggest grouping relevant documents into clusters, but alleged that Michalewicz et al. discloses grouping relevant documents into clusters based, at least in part, on addresses associated with the relevant documents, where each of the clusters corresponds to one of the addresses, and cited paragraph 0033 of Michalewicz et al. for support. Final Office Action, pages 4-5. Appellants submit that Michalewicz et al. does not disclose or suggest the above-identified feature of claim 30 for at least reasons similar to reasons given with regard to claim 1.

For at least these reasons, it is respectfully submitted that claim 30 is patentable over Shultz et al. and Michalewicz et al., whether taken alone or in any reasonable combination,

under 35 U.S.C. § 103. Reversal of the rejection of claim 30 is respectfully requested.

Claim 31 depends from claim 30. Claim 31 is, therefore, also patentable over <u>Shultz et al.</u> and <u>Michalewicz et al.</u>, whether taken alone or in any reasonable combination, under 35 U.S.C. § 103 for at least the reasons given with regard to claim 30.

11.   Claims 32 and 33.

Independent claim 33 is directed to a method that comprises receiving a search query that includes at least one portion of a telephone number; identifying documents that are associated with telephone numbers that match the at least one portion of the telephone number; grouping the identified documents into clusters based, at least in part, on the telephone numbers included in the identified documents, each of a plurality of the clusters corresponding to one of the telephone numbers; and presenting the clusters as search results.

Neither <u>Shultz et al.</u> nor <u>Michalewicz et al.</u>, whether taken alone or in any reasonable combination, discloses or suggests the combination of features recited in claim 33. For example, <u>Shultz et al.</u> and <u>Michalewicz et al.</u> do not disclose or suggest grouping identified documents into clusters based, at least in part, on the <u>telephone numbers</u> included in the identified documents, each of a plurality of the clusters corresponding to <u>one of the telephone numbers</u>.

The Examiner alleged that <u>Michalewicz et al.</u> discloses grouping relevant documents into clusters based, at least in part, on telephone numbers included in the relevant documents, and cited paragraph 0033 of <u>Michalewicz et al.</u> for support. Final Office Action, page 23. Appellants submit that <u>Michalewicz et al.</u> provides absolutely no support for the Examiner's allegation.

At paragraph 0033, <u>Michalewicz et al.</u> discloses creating a query pattern, searching for

documents that match the query pattern, and dividing the retrieved documents into subsets of

similar documents, where each subset is described in terms of a subset pattern. Nowhere in this

paragraph, or elsewhere, does <u>Michalewicz et al.</u> disclose or remotely suggest grouping the

identified documents into clusters based, at least in part, on the <u>telephone numbers included in</u>

<u>the identified documents</u>, where each of a plurality of the clusters corresponds to one of the

telephone numbers, as recited in claim 33.

> The Examiner alleged that the text of paragraph 0033 in <u>Michalewicz et al.</u>
>
> clearly indicates that grouping the relevant documents into clusters are the retrieved
> documents are divided into subsets of similar documents and at least in part on the
> telephone numbers is a type of subset pattern.

Final Office Action, page 23. Appellants submit that the disclosure of <u>Michalewicz et al.</u>

provides absolutely no support for the Examiner's allegation. <u>Michalewicz et al.</u> discloses a

subset pattern as a "logical or" of two query patterns, a "logical and" of two query patterns, a

"logical difference" of two query patterns, a "logical or" of a query pattern and a string, a

"logical and" of a query pattern and a string, or a "logical difference" between a query pattern

and a string. Paragraphs 0034-0040. In other words, <u>Michalewicz et al.</u> discloses clustering

documents based on parts of a search query. Paragraph 0132. By stark contrast, the telephone

numbers included in the documents and by which the documents are clustered in claim 33 are

<u>not</u> part of the received search query, but are instead telephone numbers included in the

documents that match a portion of a telephone number included in the search query. Thus,

<u>Michalewicz et al.</u> does not disclose or suggest grouping the identified documents into clusters

based, at least in part, on the <u>telephone numbers included in the identified documents</u>, where

each of a plurality of the clusters corresponds to <u>one of the telephone numbers,</u> as recited in

claim 33.

> The Examiner further alleged that
>
> the telephone numbers associated with the relevant documents is exemplified by the prior art as a similarity criterion that flows through the clustering of documents. An ordinary person skilled in the art understands that in order to cluster documents, there must exist a similarity criterion to group such relevant documents. The prior art of record clearly teaches that.

Final Office Action, page 23. The Examiner appears to be alleging that since <u>Michalewicz et al.</u> discloses clustering documents by a subset pattern, <u>Michalewicz et al.</u> must necessarily disclose clustering documents based on telephone numbers included in the documents. Appellants submit that the Examiner's reasoning is flawed. <u>Michalewicz et al.</u>, at best, discloses clustering documents based on patterns of keywords in a search query. <u>Michalewicz et al.</u> does not disclose or suggest grouping the identified documents into clusters based, at least in part, on the telephone numbers included in the identified documents, where each of a plurality of the clusters corresponds to one of the telephone numbers, as recited in claim 33.

Moreover, the Examiner alleged that it would have been obvious to modify the teachings of <u>Shultz et al.</u> with the teachings of <u>Michalewicz et al.</u> to include the method of grouping the relevant documents into clusters based, at least in part, on addresses located within an area of interest. Final Office Action, page 5. The Examiner did not provide any motivation statement as to why it would have been obvious to group documents into clusters based, at least in part, on telephone numbers included in the documents, as recited in claim 33. Thus, the Examiner has failed to establish a prima facie case of obviousness with regard to claim 33.

For at least these reasons, it is respectfully submitted that claim 33 is patentable over <u>Shultz et al.</u> and <u>Michalewicz et al.</u>, whether taken alone or in any reasonable combination,

under 35 U.S.C. § 103. Reversal of the rejection of claim 33 is respectfully requested.

Independent claim 32 recites features similar to, yet possibly different in scope from, features recited in claim 33. Claim 32 is, therefore, also patentable over <u>Shultz et al.</u> and <u>Michalewicz et al.</u>, whether taken alone or in any reasonable combination, under 35 U.S.C. § 103 for at least reasons similar to the reasons given with regard to claim 33.

B. The Rejection of Claims 15 and 20-24 Under 35 U.S.C. § 103(a) Based on <u>Shultz et al.</u>, <u>Michalewicz et al.</u>, and <u>Rubenczyk et al.</u> Should be Reversed.

1. Claim 15.

Dependent claim 15 recites that the relevancy factor for one of the relevant documents refers to at least one of a number of the one or more keywords present in the one of the relevant documents or how prominently the one or more keywords appear in the one of the relevant documents.

Initially, claim 15 depends from claim 1. The disclosure of <u>Rubenczyk et al.</u> does not cure the deficiencies in the disclosures of <u>Shultz et al.</u> and <u>Michalewicz et al.</u> identified above with regard to claim 1. Claim 15 is, therefore, patentable over <u>Shultz et al.</u>, <u>Michalewicz et al.</u>, and <u>Rubenczyk et al.</u> for at least the reasons given with regard to claim 1.

The Examiner alleged that it would have been obvious to modify the teachings of <u>Shultz et al.</u> and <u>Michalewicz et al.</u> with the teachings of <u>Rubenczyk et al.</u> to include a method wherein the relevancy factor for one of the relevant documents refers to at least one of a number of the one or more keywords present in the one of the relevant documents and how prominently the one or more keywords appear in the one of the relevant documents. Final Office Action, page 17. The Examiner alleged that the motivation to make such a modification is "<u>to search by a specific,</u>

user-defined geographical area." Final Office Action, page 17. Appellants submit that the

Examiner's motivation statement lacks merit. It is inconceivable how incorporating a relevancy

factor, such as the one recited in claim 15, into the combined system of Shultz et al. and

Michalewicz et al. could reasonably make the combined system capable of searching by a

specific, user-defined geographical area, as alleged by the Examiner. Because the Examiner has

not provided a reasonable motivation statement for combining alleged features of Rubenczyk et

al. into the combined system of Shultz et al. and Michalewicz et al., the Examiner has failed to

establish a prima facie case of obviousness with regard to claim 15.

For at least these reasons, it is respectfully submitted that claim 15 is patentable over

Shultz et al., Michalewicz et al., and Rubenczyk et al., whether taken alone or in any reasonable

combination, under 35 U.S.C. § 103. Reversal of the rejection of claim 15 is respectfully

requested.

      2.   Claim 20.

Dependent claim 20 recites generating scores for the relevant documents within each of

the clusters, and sorting the relevant documents within each of the clusters based, at least in part,

on the scores.

Initially, claim 20 depends from claim 1. The disclosure of Rubenczyk et al. does not

cure the deficiencies in the disclosures of Shultz et al. and Michalewicz et al. identified above

with regard to claim 1. Claim 20 is, therefore, patentable over Shultz et al., Michalewicz et al.,

and Rubenczyk et al. for at least the reasons given with regard to claim 1.

The Examiner alleged that it would have been obvious to modify the teachings of Shultz

et al. and Michalewicz et al. with the teachings of Rubenczyk et al. to include a method that

generates scores for relevant documents within each of the clusters and sorts the relevant

documents within each of the clusters based, at least in part, on the scores. Final Office Action,

page 18. The Examiner alleged that the motivation to make such a modification is "to search by

a specific, user-defined geographical area." Final Office Action, page 18. Appellants submit

that the Examiner's motivation statement lacks merit. It is inconceivable how incorporating

scoring documents and sorting the documents based on their scores, such as recited in claim 20,

into the combined system of Shultz et al. and Michalewicz et al. could reasonably make the

combined system capable of searching by a specific, user-defined geographical area, as alleged

by the Examiner. Because the Examiner has not provided a reasonable motivation statement for

combining alleged features of Rubenczyk et al. into the combined system of Shultz et al. and

Michalewicz et al., the Examiner has failed to establish a prima facie case of obviousness with

regard to claim 20.

For at least these reasons, it is respectfully submitted that claim 20 is patentable over

Shultz et al., Michalewicz et al., and Rubenczyk et al., whether taken alone or in any reasonable

combination, under 35 U.S.C. § 103. Reversal of the rejection of claim 20 is respectfully

requested.

> 3.   Claim 21.

Dependent claim 21 recites ranking the clusters based on at least one of a distance factor

or a relevancy factor, and sorting the clusters based, at least in part, on the ranking.

Initially, claim 21 depends from claim 1. The disclosure of Rubenczyk et al. does not

cure the deficiencies in the disclosures of Shultz et al. and Michalewicz et al. identified above

with regard to claim 1. Claim 21 is, therefore, patentable over <u>Shultz et al.</u>, <u>Michalewicz et al.</u>, and <u>Rubenczyk et al.</u> for at least the reasons given with regard to claim 1.

Further, <u>Shultz et al.</u>, <u>Michalewicz et al.</u>, and <u>Rubenczyk et al.</u> do not disclose or remotely suggest, for example, ranking the clusters based on at least one of a distance factor or a relevancy factor, as recited in claim 21. The Examiner alleged that <u>Rubenczyk et al.</u> discloses ranking clusters based on at least one of a distance factor or a relevancy factor and cited paragraph 0420 of <u>Rubenczyk et al.</u> for support. Final Office Action, page 18. Appellants submit that <u>Rubenczyk et al.</u> provides absolutely no support for the Examiner's allegation.

At paragraph 0420, <u>Rubenczyk et al.</u> discloses:

> A matchmaker 28 then has the task of searching the data store (possibly making use of various indices), which may include one or more separate databases, to find the items that match components of the formal request. A ranker 30 provides a numerical value to describe the overall level of match between the query and each data item, i.e. it assesses the relevance of data-items to the query. This relevance rank is affected by the quality of match of components of the formal request, the confidence in variant readings of the query, and the confidence measures of data classification (if available) attached to the items by the Indexer.

In this section, <u>Rubenczyk et al.</u> discloses a ranker that provides a numerical value to describe the overall level of match between a query and a data item in a data store. Nowhere in this section, or elsewhere, does <u>Rubenczyk et al.</u> disclose or remotely suggest ranking clusters, let alone ranking clusters based on at least one of a distance factor or a relevancy factor, as recited in claim 21.

The Examiner alleged that paragraph 0420 of <u>Rubenczyk et al.</u> clearly indicates that distance and relevance factors are a type of ranker that provides a numerical value to the data-items, which are clusters. Final Office Action, page 18. Appellants submit that the disclosure of <u>Rubenczyk et al.</u> provides absolutely no support for the Examiner's allegation. In fact, nowhere

does <u>Rubenczyk et al.</u> disclose or remotely suggest that the data items referred to in paragraph 0420 are clusters.

The Examiner alleged that it would have been obvious to modify the teachings of <u>Shultz et al.</u> and <u>Michalewicz et al.</u> with the teachings of <u>Rubenczyk et al.</u> to include a method that ranks clusters based on at least one of a distance factor or a relevancy factor, and sorts the clusters based, at least in part, on the ranking. Final Office Action, page 19. The Examiner alleged that the motivation to make such a modification is "<u>to search by a specific, user-defined geographical area</u>." Final Office Action, page 19. Appellants submit that the Examiner's motivation statement lacks merit. It is inconceivable how incorporating ranking clusters and sorting the clusters based on the ranking, such as recited in claim 21, into the combined system of <u>Shultz et al.</u> and <u>Michalewicz et al.</u> could reasonably make the combined system capable of searching by a specific, user-defined geographical area, as alleged by the Examiner. Because the Examiner has not provided a reasonable motivation statement for combining alleged features of <u>Rubenczyk et al.</u> into the combined system of <u>Shultz et al.</u> and <u>Michalewicz et al.</u>, the Examiner has failed to establish a prima facie case of obviousness with regard to claim 21.

For at least these reasons, it is respectfully submitted that claim 21 is patentable over <u>Shultz et al.</u>, <u>Michalewicz et al.</u>, and <u>Rubenczyk et al.</u>, whether taken alone or in any reasonable combination, under 35 U.S.C. § 103. Reversal of the rejection of claim 21 is respectfully requested.

       4.   Claims 22 and 23.

Dependent claim 22 recites that the distance factor for one of the clusters refers to a distance that an address associated with the one cluster is from a geographic center of the area of interest.

Initially, claim 22 depends from claim 21. The disclosure of Rubenczyk et al. does not cure the deficiencies in the disclosures of Shultz et al. and Michalewicz et al. identified above with regard to claim 21. Claim 22 is, therefore, patentable over Shultz et al., Michalewicz et al., and Rubenczyk et al. for at least the reasons given with regard to claim 21.

Further, Appellants submit that Shultz et al., Michalewicz et al., and Rubenczyk et al. do not disclose or remotely suggest that a distance factor, which is used to rank one of the clusters, refers to a distance that an address associated with the one cluster is from a geographic center of an area of interest, as recited in claim 22.

The Examiner alleged that Michalewicz et al. discloses a distance factor for one of the clusters refers to a distance that an address associated with the one cluster is from a geographic center of an area of interest, and cited paragraph 0033 of Michalewicz et al. for support. Final Office Action, page 19. Appellants submit that Michalewicz et al. provides absolutely no support for the Examiner's allegation.

At paragraph 0033, Michalewicz et al. discloses creating a query pattern, searching for documents that match the query pattern, and dividing the retrieved documents into subsets of similar documents, where each subset is described in terms of a subset pattern. Nowhere in this paragraph, or elsewhere, does Michalewicz et al. disclose or remotely suggest a distance factor, let alone a distance factor that refers to a distance that an address associated with a cluster is from a geographic center of an area of interest, as recited in claim 22.

The Examiner alleged that the text of paragraph 0033 in <u>Michalewicz et al.</u>

clearly indicates that the distance factor is an instance of a subset pattern, in which that
type of a subset pattern is contained in the cluster.

Final Office Action, page 19. Appellants submit that the Examiner's allegation has no basis in

fact. There is no disclosure in <u>Michalewicz et al.</u> of anything resembling a distance factor that is

used to rank a cluster. Thus, contrary to the Examiner's allegation, <u>Michalewicz et al.</u> does not

disclose or remotely suggest that a distance factor, which is used to rank one of the clusters,

refers to a distance that an address associated with the one cluster is from a geographic center of

an area of interest.

For at least these reasons, it is respectfully submitted that claim 22 is patentable over

<u>Shultz et al.</u>, <u>Michalewicz et al.</u>, and <u>Rubenczyk et al.</u>, whether taken alone or in any reasonable

combination, under 35 U.S.C. § 103. Reversal of the rejection of claim 22 is respectfully

requested.

Claim 23 depends from claim 22. Claim 23 is, therefore, also patentable over <u>Shultz et</u>

<u>al.</u>, <u>Michalewicz et al.</u>, and <u>Rubenczyk et al.</u>, whether taken alone or in any reasonable

combination, under 35 U.S.C. § 103 for at least the reasons given with regard to claim 22.

     5.   Claim 24.

Dependent claim 24 recites weighting the distance factor or the relevancy factor

differently based, at least in part, on a specificity of the one or more geographical identifiers.

Initially, claim 24 depends from claim 21. The disclosure of <u>Rubenczyk et al.</u> does not

cure the deficiencies in the disclosures of <u>Shultz et al.</u> and <u>Michalewicz et al.</u> identified above

with regard to claim 21. Claim 24 is, therefore, patentable over <u>Shultz et al.</u>, <u>Michalewicz et al.</u>,

and <u>Rubenczyk et al.</u> for at least the reasons given with regard to claim 21.

Further, Appellants submit that <u>Shultz et al.</u>, <u>Michalewicz et al.</u>, and <u>Rubenczyk et al.</u> do not disclose or remotely suggest weighting the distance factor or the relevancy factor differently based, at least in part, on a specificity of the one or more geographical identifiers, as recited in claim 24. The Examiner alleged that <u>Rubenczyk et al.</u> discloses "weighting the distance factor or the relevance factor differently based" and <u>Shultz et al.</u> and <u>Michalewicz et al.</u> disclose "on a specificity of the one or more geographical identifier." Final Office Action, page 20. Such a dissection of a claimed feature into a few words at a time is clearly improper. This is a clear example of how the Examiner is using impermissible hindsight in a poor attempt to recreate the claimed invention.

The Examiner's rejection falls short of establishing a prima facie case of obviousness with regard to claim 24.

For at least these reasons, it is respectfully submitted that claim 24 is patentable over <u>Shultz et al.</u>, <u>Michalewicz et al.</u>, and <u>Rubenczyk et al.</u>, whether taken alone or in any reasonable combination, under 35 U.S.C. § 103. Reversal of the rejection of claim 24 is respectfully requested.

VIII. CONCLUSION

In view of the foregoing arguments, Appellants respectfully solicit the Honorable Board

to reverse the Examiner's rejections of claims 1-8 and 12-33 under 35 U.S.C. § 103.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is

hereby made. Please charge any shortage in fees due in connection with the filing of this paper,

including extension of time fees, to Deposit Account No. 50-1070 and please credit any excess

fees to such deposit account.

Respectfully submitted,

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CLAIM APPENDIX

1.   A method, comprising:

receiving a search query that includes one or more keywords;

obtaining one or more geographical identifiers;

identifying an area of interest based, at least in part, on the one or more geographical identifiers, where a size of the area of interest is dynamically set based, at least in part, on the one or more keywords;

identifying documents that are associated with addresses located within the area of interest;

determining ones of the identified documents that match the one or more keywords as relevant documents;

grouping the relevant documents into clusters based, at least in part, on the addresses associated with the relevant documents, each of a plurality of the clusters corresponding to one of the addresses; and

presenting the clusters.

2.   The method of claim 1, wherein the one or more geographical identifiers are received as part of the search query.

3.   The method of claim 1, wherein the one or more geographical identifiers are inferred independent of the search query.

4.   The method of claim 1, wherein the one or more keywords relate to a business or organization.

5.   The method of claim 4, wherein the one or more geographical identifiers include location-specific information that approximately identifies a location of the business or organization.

6.   The method of claim 1, wherein the one or more geographical identifiers include at least one of a partial address, a partial telephone number, an entire address, or an entire telephone number.

7.   The method of claim 1, wherein the identifying an area of interest includes:

determining a geographic location based, at least in part, on the one or more geographical identifiers,

determining a geographic center of the geographic location, and

identifying locations within a certain distance of the geographic center as the area of interest, where the certain distance is dynamically set based, at least in part, on the one or more keywords.

8.   The method of claim 7, wherein the identifying locations includes:

determining a radius, and

identifying the area of interest as a circle centered on the geographic center with the

determined radius.

12.   The method of claim 1, wherein the identifying documents includes:

accessing a database that associates documents from a repository of crawled documents

to addresses associated with the documents.

13.   The method of claim 1, further comprising:

scoring the relevant documents based on at least one of a distance factor or a relevancy

factor.

14.   The method of claim 13, wherein the distance factor for one of the relevant

documents refers to a distance that an address associated with the one of the relevant documents

is from a geographic center of the area of interest.

15.   The method of claim 13, wherein the relevancy factor for one of the relevant

documents refers to at least one of a number of the one or more keywords present in the one of

the relevant documents or how prominently the one or more keywords appear in the one of the

relevant documents.

16.   The method of claim 1, wherein the grouping the relevant documents into clusters

includes:

forming a separate one of the clusters for each of the addresses located within the area of

interest.

17.   The method of claim 1, wherein the grouping the relevant documents into clusters includes:

identifying a first one of the addresses associated with a first one of the relevant documents,

determining one or more second ones of the relevant documents that are also associated with the first address, and

grouping the first relevant document and the one or more second relevant documents into a cluster.

18.   The method of claim 1, wherein the grouping the relevant documents into clusters includes:

placing each of the relevant documents into at least one cluster.

19.   The method of claim 1, wherein the grouping the relevant documents into clusters includes:

placing at least one of the relevant documents into a plurality of the clusters.

20.   The method of claim 1, wherein the presenting the clusters includes:

generating scores for the relevant documents within each of the clusters, and

sorting the relevant documents within each of the clusters based, at least in part, on the

scores.

21.   The method of claim 1, wherein the presenting the clusters includes:

ranking the clusters based on at least one of a distance factor or a relevancy factor, and

sorting the clusters based, at least in part, on the ranking.

22.   The method of claim 21, wherein the distance factor for one of the clusters refers

to a distance that an address associated with the one cluster is from a geographic center of the

area of interest.

23.   The method of claim 22, wherein the relevancy factor for one of the clusters

refers to at least one of a number of the one or more keywords present in at least one of the

relevant documents in the one cluster or how prominently the one or more keywords appear in at

least one of the relevant documents in the one cluster.

24.   The method of claim 21, wherein the presenting the clusters further includes:

weighting the distance factor or the relevancy factor differently based, at least in part, on

a specificity of the one or more geographical identifiers.

25.   The method of claim 1, wherein the presenting the clusters includes:

forming a result output for each of the clusters, the result output including at least one of

a title or a snippet for one of the relevant documents in the cluster.

26.   The method of claim 1, wherein the presenting the clusters includes:

forming a result output for each of the clusters, the result output including a name of a

business or organization and a title for one or more of the relevant documents in the cluster.

27.   A system, comprising:

means for receiving a search query that includes one or more keywords;

means for identifying a geographical location;

means for determining a geographical center of the geographical location;

means for identifying locations within a certain distance of the geographical center as a

geographical area of interest, where the certain distance is dynamically set based, at least in part,

on the one or more keywords;

means for identifying documents that are associated with addresses located within the

geographical area of interest;

means for determining relevant ones of the identified documents, as relevant documents,

based, at least in part, on the search query; and

means for forming the relevant documents into clusters based, at least in part, on the

addresses associated with the relevant documents, each of a plurality of the clusters

corresponding to one of the addresses.

28.   A system, comprising:

a memory configured to store information that matches documents to addresses

associated with the documents; and

a processor connected to the memory and configured to:

receive a search query that includes one or more geographical identifiers,

determine a geographical area of interest based, at least in part, on the one or more geographical identifiers,

identify documents that are associated with addresses located within the geographical area of interest based, at least in part, on the information stored in the memory,

group the identified documents into clusters based, at least in part, on the addresses associated with the identified documents, each of a plurality of the clusters corresponding to one of the addresses,

assign scores to each of the clusters based, at least in part, on a distance factor and a relevancy factor, where at least one of the distance factor or the relevancy factor is weighted based, at least in part, on a specificity of the one or more geographical identifiers, and

provide the clusters as search results based, at least in part, on the assigned scores.

29.   A method, comprising:

receiving a search query;

identifying a geographical area of interest based, at least in part, on the search query;

identifying documents that are associated with addresses located within the geographical area of interest;

grouping the identified documents into clusters based, at least in part, on the addresses

associated with the identified documents, each of a plurality of the clusters corresponding to one

of the addresses;

assigning scores to each of the clusters based, at least in part, on a distance factor and a

relevancy factor, where at least one of the distance factor or the relevancy factor is weighted

based, at least in part, on a specificity of the one or more geographical identifiers; and

presenting the clusters based, at least in part, on the assigned scores.

30.   A method, comprising:

receiving a search query that includes one or more keywords and at least one portion of a

telephone number;

identifying a geographical area of interest based, at least in part, on the at least one

portion of the telephone number, where a size of the geographical area of interest is dynamically

set based, at least in part, on the one or more keywords;

identifying documents that are associated with addresses located within the geographical

area of interest;

grouping the identified documents into clusters based, at least in part, on the addresses

associated with the identified documents, each of a plurality of the clusters corresponding to one

of the addresses; and

presenting the clusters as search results.

31.   The method of claim 30, wherein the at least one portion of the telephone number

includes at least one of an area code or a prefix associated with the telephone number.

       32.   A method, comprising:

receiving a search query that includes one or more keywords and at least one portion of a telephone number;

identifying documents that are associated with telephone numbers that match the at least one portion of the telephone number;

determining ones of the identified documents that match the one or more keywords as relevant documents;

grouping the relevant documents into clusters based, at least in part, on the telephone numbers included in the relevant documents, each of a plurality of the clusters corresponding to one of the telephone numbers; and

presenting the clusters as search results.

       33.   A method, comprising:

receiving a search query that includes at least one portion of a telephone number;

identifying documents that are associated with telephone numbers that match the at least one portion of the telephone number;

grouping the identified documents into clusters based, at least in part, on the telephone numbers included in the identified documents, each of a plurality of the clusters corresponding to one of the telephone numbers; and

presenting the clusters as search results.

IX.   EVIDENCE APPENDIX

None

X.   RELATED PROCEEDINGS APPENDIX

None